

REMARKS

Claims 1 - 6, 8 - 14, 16 - 22, and 24 - 28 are pending. Claims 7, 15, and 23 have been cancelled. Claims 1 - 6, 8 - 14, 16 - 22, and 24 - 28 have been amended. No new matter has been introduced. Reexamination and reconsideration of the application are respectfully requested.

In the September 8, 2005 Office Action, the Examiner rejected claims 1 - 28 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,456,590 to Ren et al. (the Ren reference). This rejection is respectfully traversed in so far as it is applicable to the presently pending claims.

Independent claim 1, as amended, distinguishes over the Ren reference.

Independent claim 1, as amended, recites:

A method of controlling a transmission rate, comprising:  
determining whether a pause has been received;  
**determining, after waiting a pause time specified by the pause, whether a maximum of an inter-frame spacing (IFS) has been reached if the pause has been received; and**  
**increasing the inter-frame spacing by a value if the maximum of the inter-frame spacing has not been reached to reduce the transmission rate.**

Claim 1, as amended, distinguishes over the cited references. The Examiner states the Ren reference discloses that, when a link needs to be turned off, the Ren reference system sends the upstream port a MAC flow control frame with a maximum pause time (called an OFF control frame) and when the link needs to be turned on, the Ren system sends a MAC flow control frame with zero pause time (called an ON control frame). The Examiner states that the Ren reference also discloses that the upstream device could be paused for a specific time interval based on the occupancy level of its corresponding virtual input queue. (*Office Action, page 3*). The Ren reference is

specifically directed to the receiving device sending a pause frame with 1) a maximum time, 2) no time (which results in the sending device being turned on), or 3) a specific time interval to the sending device. The Ren reference is not disclosing what happens at the sending device except the Ren reference discloses that the sending device will pause based on the received pause time.

This is not the same as a method of controlling a transmission rate, including determining whether a pause has been received and **determining, after waiting a pause time specified by the pause, whether a maximum of an inter-frame spacing (IFS) has been reached if the pause has been received.** It is not the same because the Ren reference is disclosing only that the sending device waits a pause time specified by the pause and does not disclose that the sending device determines whether a maximum of IFS has been reached after waiting for the pause time. In other words, the present invention is directed to **waiting for a specific period of time and modifying a transmission rate by a value** while the Ren reference is disclosing only that the transmission is stopped or paused for a specific period of time and does not disclose that the transmission rate is modified. The Ren reference is disclosing the prior art system described in the present application where a pause packet or frame causes the link-partner (in this case the sending device) to momentarily stop transmitting the packet to the receiver. (*Present application, page 2, lines 1 - 5*). Accordingly, applicant respectfully submits that claim 1, as amended, distinguishes over the Ren reference.

Claims 9 and 17, both as amended, recite limitations similar to claim 1, as amended. Accordingly, applicant respectfully submits that claims 9 and 17, both as

amended, distinguish over the Ren reference for reasons similar to those discussed above in regard to claim 1, as amended.

Claims 2 - 3, 10 - 11, and 18 - 19 depend, indirectly or directly on claims 1, 9, and 17, respectively. Accordingly, applicant respectfully submits that claims 2 - 3, 10 - 11, and 18 - 19 distinguish over the Ren reference for the same reasons as those discussed above in regard to claim 1, as amended.

Claim 2 further distinguishes over the Ren reference. Claim 2, as amended, recites:

**The method according to claim 1, wherein the value is based on a selection from the group consisting of a frequency of pause frames and a proximity of a current inter-frame spacing to the maximum or a minimum of the inter-frame spacing.**

The Ren reference does not disclose that the value that the IFS is increased by is either a frequency of pause frames or a proximity of a current IFS to a minimum or a maximum IFS. First, the Ren reference never discloses that inter-frame spacing is taken into consideration or that it is increased. Further, there is no discussion that a **frequency of pause frames is utilized or that a proximity of the current inter-frame spacing to a minimum or maximum is utilized**. Accordingly, applicant respectfully submits that claim 2, as amended, further distinguishes over the Ren reference.

Claims 10 and 18 recite limitations similar to claim 2, as amended. Accordingly, applicant respectfully submits that claims 10 and 18 further distinguish over the Ren reference for reasons similar to those discussed above in regard to claim 2.

Independent claim 4 distinguishes over the Ren reference. Independent claim 4, as amended, recites:

A method of increasing a transmission rate, comprising:  
determining whether a pause frame has been received;  
**determining whether a minimum of an inter-frame spacing (IFS) has been reached if the pause frame has not been received;**  
and  
**decreasing the inter-frame spacing for a number of frames by a value if the minimum of the inter-frame spacing has not been reached to increase the transmission rate.**

The Ren reference does not disclose, teach, or suggest the method of claim 4, as amended. The Ren reference discloses that a sending device receives a pause frame with a maximum pause time, or that when a link needs to be turned on, a MAC control frame with a zero pause time is received. Further, the Ren reference discloses that the upstream device could be paused for a specific time interval based on the occupancy level in the virtual input queue. (*Ren*, col. 9, lines 33 - 45). This is not the same as a method for increasing a transmission rate including determining whether a pause has been received and **determining whether a minimum of an inter-frame spacing (IFS) has been reached if the pause has not been received**. It is not the same because the Ren reference is disclosing only that a sending device performs actions of receiving a pause frame and pausing the upstream device (i.e., sending device) for either 1) no time; 2) a maximum time; or 3) a specific time interval. There is no disclosure that there is a determination as to whether a minimum of an inter-frame spacing has been reached. The Ren reference is directed to pausing and does not disclose any transmission step. Overall, the Ren reference is more focused on modifying the virtual input queues of the receiving device in order to accommodate input ports with higher data traffic rather than modifying a traffic rate of the sending

device.

The Ren reference also does not disclose a method for increasing a transmission rate including **decreasing the inter-frame spacing for a number of frames by a value if the minimum of the inter-frame spacing has not been reached to increase the transmission rate.** Because the Ren reference does not disclose modifying the transmission rate, the Ren reference cannot decrease the inter-frame spacing for a number of frames. The Ren reference discusses only that a frame with zero pause time can be sent, which for one frame then causes the upstream device to be turned on or start transmitting. Turning on the upstream or sending device is not decreasing the inter-frame spacing to increase the transmission rate. Accordingly, claim 4, as amended, distinguishes over the Ren reference.

Independent claims 12 and 20, both as amended, recite limitations similar to claim 4, as amended. Accordingly, applicant respectfully submits that claims 12 and 20, both as amended, distinguish over the Ren reference for reasons similar to those discussed above in regard to claim 4.

Claims 5 - 6, 8, 13 - 14, 16, 21 - 22, and 24 depend, indirectly or directly, on claims 4, 12, and 20. Accordingly, applicant respectfully submits that claims 5 - 6, 8, 13 - 14, 16, 21 - 22, and 24 distinguish over the Ren reference for the same reasons as those discussed above in regard to claim 4.

Claim 5 further distinguishes over the Ren reference. Claim 5 recites:

The method according to claim 4, further including **waiting a poll time prior to determining whether the pause frame has been received.**

The Ren reference does not disclose that a sending device waits a poll time prior

to determining whether the pause has been received. The Examiner states that column 13, lines 4 - 24 of the Ren reference disclose this feature. (*Office Action, page 4*).

Specifically, the Ren reference discloses that if a device is paused in a pause, a static allocation algorithm advances to check a virtual input queue to determine when a frame has arrived and also if any frames have departed. If the value of the virtual input queue, in terms of number of frames in the queue, is less than a low water mark, then the static allocation algorithm, in the receiving device, turns back on the upstream device feeding frames to the input port, i.e., it sends the zero pause frame. In other words, the receiving device is monitoring the queue, and if the queue is not full or a low threshold, the receiving device sends the pause frame indicating no pause time, which results in the sending device to immediately begin transmitting at a certain speed.

This is not the same as **waiting a poll time at the receiving device before determining if the pause frame is to be received**, as is recited in claim 5. There is no disclosure in the Ren reference that the sending unit waits a specific time before determining whether a pause has been received or not because the Ren reference's receiving device only receives the pause frame and waits the pause time indicated by the pause frame. Accordingly, applicant respectfully submits that claim 5 further distinguishes over the Ren reference.

Claims 13 and 21 recite similar limitations to claim 5. Accordingly, applicant respectfully submits that claims 13 and 21 distinguish over the Ren reference for reasons similar to those discussed above in regard to claim 5.

Claim 6 further distinguishes over the Ren reference. Claim 6, as amended, recites:

The method according to claim 4, further including **determining whether the pause frame has been received after a packet count value is reached.**

There is no disclosure in the Ren reference that a sending device waits to determine if a pause has been received after a certain packet count value is reached. The Ren reference discloses that when the upstream device receives the packet, it implements the pausing of the device for 1) a specific period of time or 2) for no time. The Ren reference does not disclose that the sending device is waiting a **certain number of packets before it determines whether a pause has been received.** The Ren reference's upstream (i.e., sending) device automatically implements the pause and does not wait any time period or number of frames before implementing the pause. Accordingly, applicant respectfully submits that claim 6, as amended, further distinguishes over the Ren reference.

Claims 14 and 22 recite limitations similar to claim 6. Accordingly, applicant respectfully submits that claims 14 and 22 distinguish over the Ren reference for reasons similar to those discussed above in regard to claim 6.

Claim 25 recites limitations similar to both claims 1 and 4. Accordingly, applicant respectfully submits that claim 25 distinguishes over the Ren reference for reasons similar to those discussed above in regard to both claims 1 and 4.

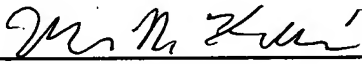
Claims 26 - 28 depend, indirectly or directly, on claim 25. Accordingly, applicant respectfully submits that claims 26 - 28 distinguish over the Ren reference for the same reasons as those discussed above in regard to claims 1 and 4.

Applicant believes that the claims are in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.


Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP

Date: October 12, 2005

By:   
Mark R. Kendrick  
Registration No. 48,468  
Attorney for Applicant(s)

Date: October 12, 2005

By:   
Roger R. Wise  
Registration No. 31,204  
Attorney for Applicant(s)

725 South Figueroa Street, Suite 2800  
Los Angeles, CA 90017-5406  
Telephone: (213) 488-7100  
Facsimile: (213) 629-1033